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1. (Amended) A diffractive device having a surface relief structure which, when illuminated by a light source, generates one or more diffraction images which are observable from particular ranges of viewing angles around the device, including:

a region of diffractive structural elements, the region having a length and a width;

background diffractive structural elements distributed over the length of the region, a plurality of the background elements having a longitudinal extent which extends throughout the width of the region; and

a plurality of interstitial diffractive structural elements;

wherein each of the plurality of interstitial elements are interspersed at least partially longitudinally adjacent to one or more of the background elements within the region such that the diffractive action of the background elements is modulated by the interstitial elements, with differing interstitial element configuration in differing parts of the surface relief structure producing differing diffraction effects in corresponding parts of the diffraction images.

2. (Original) A diffractive device according to claim 1 wherein at least some of the background elements consist of a multiplicity of continuously connected individual ridge or groove segments, with ridge or groove segments in adjacent background elements being arranged in an approximately parallel configuration, and wherein at least some of the interstitial elements consist of individual or bifurcated ridge or groove segments interspersed between the background elements, with interstitial element ridge or groove segments being approximately parallel to ridge or groove segments in adjacent background elements.

3. (Original) A diffractive device according to claim 1 wherein at least some of the background elements are approximately parallel, each consisting of a plurality of discontinuous individual ridge or groove segments, and wherein at least some of the interstitial elements are approximately parallel to each other, each consisting of one or more ridge or groove segments and each being located in a discontinuity in a background element.

4. (Original) A diffractive device according to claim 3 wherein at least some of the interstitial elements are connected smoothly at each end to a background element.

5. (Original) A diffractive device according to claim 3 wherein at least some of the interstitial elements are oriented generally at right-angles to the general orientation of the background elements.

6. (Original) A diffractive device according to claim 1 wherein at least some of the interstitial elements are connected smoothly to adjacent interstitial elements and/or background elements in one or more of the following ways:

(a) a single interstitial element bifurcates smoothly into two interstitial elements;

(b) two interstitial elements join smoothly into a single interstitial element;

(c) an interstitial element joins smoothly into a background element;

(d) an interstitial element of a particular depth and width transitions smoothly into an interstitial element of a different depth and width;

(e) an interstitial element of a particular shape and/or curvature transitions smoothly into an interstitial element of a different shape and/or curvature;

(f) an interstitial element with a particular angular orientation relative to the background elements joins smoothly to an interstitial element having a different angular orientation.

7. (Original) A diffractive device according to claim 1 wherein at least some of the background elements are connected smoothly to adjacent background elements and/or interstitial elements in one or more of the following ways:

(a) a single background element bifurcates smoothly into two background elements;

(b) two background elements join smoothly into a single background element;

(c) a background element joins smoothly into an interstitial element;

(d) a background element of a particular depth and width transitions smoothly into a background element of a different depth and width;

(e) a background element of a particular shape and/or curvature transitions smoothly into a background element of a different shape and/or curvature;

(f) a background element with a particular angular orientation relative to other background elements joins smoothly to a background element having a different angular orientation.

8. (Original) A diffractive device according to claim 1 wherein each of the background elements and the interstitial elements has a shape which includes one or more of the following features:

(a) a straight, curved or undulating groove;

(b) a straight, curved or undulating ridge;

(c) an array of dot-shaped indentations or protrusions; or

(d) a polygonally shaped indentation or protrusion.

9. (Original) A diffractive device according to claim 1 wherein the diffraction effects observed in a particular part of the image are determined by the interstitial element configuration in a corresponding part of the surface relief structure, and the interstitial element configuration features include one or more of the following features:

(a) lengths of interstitial elements;

(b) widths of interstitial elements;

(c) depths and/or heights of interstitial elements;

(d) local spatial frequency of interstitial elements;

(e) degree of curvature of interstitial elements;

(f) shape of interstitial elements; and

(g) shapes of joins between adjacent interstitial elements.

10. (Original) A diffractive device according to claim 9 which includes between background elements interstitial elements which vary continuously in terms of orientation, curvature, thickness and/or shape, the variations being a means by which image information is encoded into the surface relief structure.

11. (Original) A diffractive device according to claim 9 wherein at least some of the interstitial elements are oriented generally parallel to the background elements.

12. (Original) A diffractive device according to claim 9 wherein at least some of the interstitial elements are arranged in a comb-like configuration, with the teeth of the comb being oriented at right angles or at an angle oblique to the general orientation of the background elements.

13. (Original) A diffractive device according to claim 9 wherein at least some of the interstitial elements are arranged in groups oriented at right angles or obliquely to the general orientation of the background elements, such that a cross-section through the group has a periodic or sinusoidal shape of many repeating periods or oscillations.

14. (Original) A diffractive device according to claim 9 wherein at least some interstitial element configurations are designed to create grey-scale or variable image intensity information in the image, and one or more of the following configuration features give rise to the grey-scale or variable image intensity information:

(a) lengths of interstitial elements;

(b) degree of curvature of interstitial elements;

(c) widths of interstitial elements and shapes of joins between adjacent elements;

(d) local slope or angle of interstitial elements.

15. (Original) A diffractive device according to claim 9 wherein at least some interstitial element configurations are designed to create colour information in the image.

16. (Original) A diffractive device according to claim 1 wherein the background elements include one or more of the following configurations:

(a) straight, equally spaced background elements;

(b) straight, variably spaced background elements;

(c) undulating, equally spaced background elements;

(d) undulating, variably spaced background elements;

(e) equally spaced closed or open elliptically shaped background elements;

(f) variably spaced closed or open elliptically shaped background elements;

(g) zig-zag shaped background elements of variable zig or zag angle.

17. (Original) A diffractive device according to claim 1 wherein the surface relief structure generates two or more diffraction images which are observable from different ranges of viewing angles, wherein some regions of the surface relief structure contribute to one of the images, and other regions contribute to another of the images.

18. (Original) A diffractive device according to claim 1 wherein at least some of the interstitial elements have lengths of less than 0.25mm.

19. (Original) A diffractive device according to claim 18 wherein the background elements have lengths of greater than 0.25mm.

20. (Original) A diffractive device according to claim 1 wherein the surface relief structure includes between background elements one or more of the following:

(a) small scale text or graphics indented into or protruding from the surface relief structure;

(b) interstitial elements consisting of parallelograms of varying angular orientations indented into the surface relief structure;

(c) diffusely reflecting randomly distributed interstitial elements;

(d) diffusely reflecting trapezoidal interstitial elements.

21. (Original) A diffractive device according to claim 1 wherein machine-readable digital information is encoded into the positioning, length, orientation and/or other physical characteristics of interstitial elements, such that the information may be read by passing a laser over the interstitial elements and analysing and decoding the reflected light.

22. (New) A diffractive device having a surface relief structure which, when illuminated by a light source, generates one or more diffraction images which are observable from particular ranges of viewing angles around the device, including:

a region of diffractive structural elements, the region having a length and a width;

background diffractive structural elements distributed over the length of the region, a plurality of the background elements having a longitudinal extent which extends throughout the width of the region; and

a plurality of interstitial diffractive structural elements;

wherein at least some of the plurality of interstitial elements are smoothly connected to one or more of the background elements within the region such that the

diffractive action of the background elements is modulated by the interstitial elements, with differing interstitial element configuration in differing parts of the surface relief structure producing differing diffraction effects in corresponding parts of the diffraction images.

23. (New) A diffractive device according to claim 1 wherein at least some of the background elements consist of a multiplicity of continuously connected individual ridge or groove segments, with ridge or groove segments in adjacent background elements being arranged in an approximately parallel configuration, and wherein at least some of the interstitial elements consist of individual or bifurcated ridge or groove segments interspersed between the background elements, with interstitial element ridge or groove segments being approximately parallel to ridge or groove segments in adjacent background elements.

24. (New) A diffractive device according to claim 1 wherein at least some of the background elements are approximately parallel, each consisting of a plurality of discontinuous individual ridge or groove segments, and wherein at least some of the interstitial elements are approximately parallel to each other, each consisting of one or more ridge or groove segments and each being located in a discontinuity in a background element.

25. (New) A diffractive device according to claim 3 wherein at least some of the interstitial elements are connected smoothly at each end to a background element.

26. (New) A diffractive device according to claim 3 wherein at least some of the interstitial elements are oriented generally at right-angles to the general orientation of the background elements.

27. (New) A diffractive device according to claim 1 wherein at least some of the interstitial elements are connected smoothly to adjacent interstitial elements and/or background elements in one or more of the following ways:

(a) a single interstitial element bifurcates smoothly into two interstitial elements;

(b) two interstitial elements join smoothly into a single interstitial element;

(c) an interstitial element joins smoothly into a background element;

(d) an interstitial element of a particular depth and width transitions smoothly into an interstitial element of a different depth and width;

(e) an interstitial element of a particular shape and/or curvature transitions smoothly into an interstitial element of a different shape and/or curvature;

(f) an interstitial element with a particular angular orientation relative to the background elements joins smoothly to an interstitial element having a different angular orientation.

28. (New) A diffractive device according to claim 1 wherein at least some of the background elements are connected smoothly to adjacent background elements and/or interstitial elements in one or more of the following ways:

(a) a single background element bifurcates smoothly into two background elements;

(b) two background elements join smoothly into a single background element;

(c) a background element joins smoothly into an interstitial element;

(d) a background element of a particular depth and width transitions smoothly into a background element of a different depth and width;

(e) a background element of a particular shape and/or curvature transitions smoothly into a background element of a different shape and/or curvature;

(f) a background element with a particular angular orientation relative to other background elements joins smoothly to a background element having a different angular orientation.

29. (New) A diffractive device according to claim 1 wherein each of the background elements and the interstitial elements has a shape which includes one or more of the following features:

(a) a straight, curved or undulating groove;

(b) a straight, curved or undulating ridge;

(c) an array of dot-shaped indentations or protrusions; or

(d) a polygonally shaped indentation or protrusion.

30. (New) A diffractive device according to claim 1 wherein the diffraction effects observed in a particular part of the image are determined by the interstitial element configuration in a corresponding part of the surface relief structure, and the interstitial element configuration features include one or more of the following features:

(a) lengths of interstitial elements;

(b) widths of interstitial elements;

(c) depths and/or heights of interstitial elements;

(d) local spatial frequency of interstitial elements;

(e) degree of curvature of interstitial elements;

(f) shape of interstitial elements; and

(g) shapes of joins between adjacent interstitial elements.

31. (New) A diffractive device according to claim 9 which includes between background elements interstitial elements which vary continuously in terms of orientation, curvature, thickness and/or shape, the variations being a means by which image information is encoded into the surface relief structure.

32. (New) A diffractive device according to claim 9 wherein at least some of the interstitial elements are oriented generally parallel to the background elements.

33. (New) A diffractive device according to claim 9 wherein at least some of the interstitial elements are arranged in a comb-like configuration, with the teeth of the comb being oriented at right angles or at an angle oblique to the general orientation of the background elements.

34. (New) A diffractive device according to claim 9 wherein at least some of the interstitial elements are arranged in groups oriented at right angles or obliquely to the general orientation of the background elements, such that a cross-section through the group has a periodic or sinusoidal shape of many repeating periods or oscillations.

35. (New) A diffractive device according to claim 9 wherein at least some interstitial element configurations are designed to create grey-scale or variable image intensity information in the image, and one or more of the following configuration features give rise to the grey-scale or variable image intensity information:

(a) lengths of interstitial elements;

(b) degree of curvature of interstitial elements;

(c) widths of interstitial elements and shapes of joins between adjacent elements;

(d) local slope or angle of interstitial elements.

36. (New) A diffractive device according to claim 9 wherein at least some interstitial element configurations are designed to create colour information in the image.

37. (New) A diffractive device according to claim 1 wherein the background elements include one or more of the following configurations:

(a) straight, equally spaced background elements;

(b) straight, variably spaced background elements;

(c) undulating, equally spaced background elements;

(d) undulating, variably spaced background elements;

(e) equally spaced closed or open elliptically shaped background elements;

(f) variably spaced closed or open elliptically shaped background elements;

(g) zig-zag shaped background elements of variable zig or zag angle.

38. (New) A diffractive device according to claim 1 wherein the surface relief structure generates two or more diffraction images which are observable from different ranges of viewing angles, wherein some regions of the surface relief structure contribute to one of the images, and other regions contribute to another of the images.

39. (New) A diffractive device according to claim 1 wherein at least some of the interstitial elements have lengths of less than 0.25mm.

40. (New) A diffractive device according to claim 18 wherein the background elements have lengths of greater than 0.25mm.

41. (New) A diffractive device according to claim 1 wherein the surface relief structure includes between background elements one or more of the following:

(a) small scale text or graphics indented into or protruding from the surface relief structure;

(b) interstitial elements consisting of parallelograms of varying angular orientations indented into the surface relief structure;

(c) diffusely reflecting randomly distributed interstitial elements;

(d) diffusely reflecting trapezoidal interstitial elements.

42. (New) A diffractive device according to claim 1 wherein machine-readable digital information is encoded into the positioning, length, orientation and/or other physical characteristics of interstitial elements, such that the information may be read by passing a laser over the interstitial elements and analysing and decoding the reflected light.